File 9B CEVA
RCS #08-097 HED

FINDING OF NO SIGNIFICANT IMPACT
FOR
CONSTRUCT DUMPSTER SCREEN
NEAR SUNFLOWER CHAPEL

AGENCY: Department of the Air Force

PROPOSED ACTION: Construct Dumpster Screen Near Sunflower Chapel
Under this alternative, Grand Forks AFB would construct a dumpster screen around the dumpster located near Sunflower Chapel. Project would include all necessary masonry, construction, site preparation, and excavation.

ALTERNATIVES CONSIDERED: Under the second alternative, Grand Forks AFB would not construct a dumpster screen near Sunflower Chapel. The dumpster would be removed and personnel that currently utilize the dumpster would be forced to find another dumpster to dispose of garbage from their facility. Under alternative 3, no action alternative, would not construct a dumpster screen around the dumpster located near Sunflower Chapel. Grand Forks AFB would not be in compliance with JSIVA recommendations. Hazardous and unofficial materials could continue to be thrown in the dumpster threatening both military members and their families. Unauthorized waste could continue to be dumped increasing base disposal costs. The appearance of the dumpster would continue to negatively affect the appearance of base facilities and reduce quality of life.

ENVIRONMENTAL CONSEQUENCES:
Air Quality - Construction activities would result in a short-term minimal increase of criteria air pollutants, as fuel burned by internal combustion engine power construction and earth-moving equipment. Earth moving activities would generate fugitive dust. Best management practices (BMPs) to reduce fugitive emissions would be implemented.

Noise - The short-term operation of heavy equipment in the construction area would generate additional noise only during construction and would cease after completion.

Wastes, Hazardous Materials, and Stored Fuels - The increase in hazardous and solid wastes from construction related activities would be minimal and temporary. Construction debris would be disposed of in approved location, such as the Grand Forks Municipal Landfill.

Water Resources – If the excavated area fills with surface water, groundwater could be exposed to contaminants by infiltration. Surface water quality could degrade in the short-term due to possible erosion and possible contamination from spills. There would be minimal impacts to ground water, surface water, and water quality if BMPs were followed.

Biological Resources – BMPs would be implemented to ensure that impacts to biological resources are kept to a minimum. Vegetation would be reestablished at the end of the project. Construction would have insignificant impacts to wildlife and any wildlife disturbed would be able to find similar habitat in the local area.

Report Documentation Page

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13. SUPPLEMENTARY NOTES

14. ABSTRACT

This Final EA has been prepared in accordance with the National Environmental Policy Act, and assesses the potential environmental impacts of repairing electrical lines along Eielson Street on Grand Forks AFB, located in Grand Forks County, North Dakota. Resource areas analyzed in the EA include Air Quality; Noise, Wastes, Hazardous Materials, and Stored Fuels; Water Resources; Biological Resources Socioeconomic Resources; Cultural Resources; Land Use; Transportation Systems; Airspace/ Airfield Operations; Safety and Occupational Health Environmental Management; and Environmental Justice. In addition to the Proposed Action, the Utilization of an Alternate Dumpster and the No Action Alternative were analyzed in the EA. The EA also addresses the potential cumulative effects of the associated construction activities along with other concurrent actions at Grand Forks AFB and the surrounding area.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**51**	

Socioeconomic Resources – Construction would be completed by a contractor. Secondary retail purchases would make an additional contribution to the local communities.

Cultural Resources - The proposed action has little potential to impact cultural resources. In the event that any artifacts were discovered, the contractor would halt construction and immediately notify Grand Forks AFB civil engineers who would notify the State Historic Preservation Office.

Land Use - The proposed construction would not have an impact on land use.

Transportation Systems - There would be a minimal short-term increase to traffic flows from the contractor traveling to the construction site.

Airspace/Airfield Operations - The proposed action would not impact aircraft safety or airspace compatibility.

Safety and Occupational Health - The proposed construction would improve the safety of base personnel and residents. The dumpster would be in compliance with JSIVA recommendations.

Environmental Management – The proposed action would not impact IRP Sites. BMPs would be implemented to prevent erosion. No pesticides would be used as part of the project.

Environmental Justice - There are no minority or low-income populations in the area of the proposed action or alternatives, and there would be no disproportionately high or adverse impact on such populations.

No adverse environmental impact to any of the areas identified by the AF Form 813 is expected by the proposed action, Construct Dumpster Screen.

CONCLUSION:
Based on the Environmental Assessment performed for Construct Dumpster Screen, no significant environmental impact is anticipated from the proposed action. Based upon this finding, an Environmental Impact Statement is not required for this action. This document and the supporting AF Form 813 fulfill the requirements of the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) regulations implementing NEPA, and Air Force Instruction 32-7061, which implements the CEQ regulations.

WAYNE A. KOOP, R.E.M., GM-13
Environmental Management Flight Chief

Date: 16 Sep 03

Final

Environmental Assessment

CONSTRUCT DUMPSTER SCREEN

Near Sunflower Chapel

At

Grand Forks AFB, North Dakota

25 Aug 03

Cover Sheet

Agency: US Air Force

Action: The action proposes to construct a dumpster screen for the dumpster located near Sunflower Chapel at Grand Forks Air Force Base (AFB), North Dakota.

Contacts:
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525 Tuskegee Airmen Blvd
Grand Forks AFB, ND 58205

Designation: Final Environmental Assessment (EA)

Abstract: This Final EA has been prepared in accordance with the National Environmental Policy Act, and assesses the potential environmental impacts of repairing electrical lines along Eielson Street on Grand Forks AFB, located in Grand Forks County, North Dakota. Resource areas analyzed in the EA include Air Quality; Noise, Wastes, Hazardous Materials, and Stored Fuels; Water Resources; Biological Resources; Socioeconomic Resources; Cultural Resources; Land Use; Transportation Systems; Airspace/Airfield Operations; Safety and Occupational Health; Environmental Management; and Environmental Justice.

In addition to the Proposed Action, the Utilization of an Alternate Dumpster and the No Action Alternative were analyzed in the EA. The EA also addresses the potential cumulative effects of the associated construction activities along with other concurrent actions at Grand Forks AFB and the surrounding area.

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ACRONYMS, ABBREVIATIONS, AND TERMS

ACM	Asbestos Containing Material
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
AMU	Aircraft Maintenance Unit
APZs	Accident Potential Zones
ARPA	Archeological Resource Protection Act
ARW	Air Fueling Wing
Ave	Avenue
BASH	Bird Aircraft Strike Hazard
Blvd	Boulevard
BMPs	Best Management Practices
CAA	Clean Air Act
CWA	Clean Water Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dBa	Decibel
DNL	Day-Night Average A-Weighted Sound Level
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
F	Fahrenheit
FONSI	Finding of No Significant Impact
Ft	feet
HAP	Hazardous Air Pollutants
H_2S	Hydrogen Sulfide
IRP	Installation Restoration Program
LT	Long-Term

mph	Miles Per Hour
MSL	Mean Sea Level
MXG	Maintenance Group
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
ND	North Dakota
NDAAQS	North Dakota National Ambient Air Quality Standards
NDDH	North Dakota Department of Health
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
O_3	Ozone
OG	Operations Group
OSHA	Occupational Safety and Health Act
Pb	Lead
PM_{10}	Particulate Matter 10 Microns In Diameter
PM_{25}	Particulate Matter 25 Microns In Diameter
PSD	Prevention of Significant Deterioration
RACM	Regulated Asbestos Containing Materials
RCRA	Resource Conservation and Recovery Act
SAGE	Strategic Air Ground Equipment
SARA	Superfund Amendments and Reauthorization Act
SO_2	Sulfur Dioxide
St	Street
ST	Short-Term
TPY	Tons Per Year
TSCA	Toxic Substance Control Act
TSI	Thermal System Insulation
TSP	Total Suspended Particulates
USAF	United States Air Force
USEPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

The United States Air Force proposes to construct a dumpster screen for the dumpster located near Sunflower Chapel on Grand Forks Air Force Base (AFB), North Dakota.

Purpose and Need: Grand Forks AFB needs to comply with required military force protection standards. The 2003 Joint Staff Integrated Vulnerability Assessment (JSIVA) recommended the all dumpsters be screened because exposed dumpsters located on Grand Forks AFB are vulnerabilities to the safety and security of the base. The Sunflower Chapel is a "soft target" and extra screening measures must be taken.

Proposed Action: Under this alternative, Grand Forks AFB would construct a dumpster screen around the dumpster located near Sunflower Chapel. Project would include all necessary masonry, construction, site preparation, and excavation.

Alternate Location Alternative: Grand Forks AFB would remove the dumpster located near Sunflower Chapel and personnel that currently utilize the dumpster would be forced to find another to dispose of their facilities garbage.

No Action Alternative: The no action alternative would not construct a dumpster screen around the dumpster located near Sunflower Chapel. Grand Forks AFB would not be in compliance with JSIVA recommendations.

Impacts by Resource Area

Air Quality - Construction activities would result in a short-term minimal increase of criteria air pollutants, as fuel (gasoline and diesel) that is burned by internal combustion engine power construction and earth-moving equipment. Earth moving activities would generate fugitive dust (PM_{10}). Best management practices (BMPs) to reduce fugitive emissions would be implemented to the maximum extent possible to reduce the amount of these emissions.

Noise - The short-term operation of heavy equipment in the construction area would generate additional noise only during construction and would cease after completion.

Wastes, Hazardous Materials, and Stored Fuels - The increase in hazardous and solid wastes from construction related activities would be minimal and temporary. Construction debris would be disposed of in approved location, such as the Grand Forks Municipal Landfill, which is located within 12 miles of the construction site.

Water Resources –Surface water quality could degrade in the short-term, during actual construction, due to possible erosion contributing to turbidity of runoff and due to possible contamination from spills, leaks from construction equipment. Provided BMPs are followed, there would be minimal impacts to ground water, surface water, and water quality.

Biological Resources – BMPs and control measures, including silt fences and covering of stockpiles, would be implemented to ensure that impacts to biological resources be kept to a minimum. There would be a minimal short-term loss of vegetation from the repair of the electrical lines. Construction would have insignificant impacts to wildlife. The area is improved and maintained by grounds maintenance personnel on a regular basis. Due to the abundance and mobility of these species and the profusion of natural habitats in the general vicinity, any wildlife disturbed would be able to find similar habitat in the local area.

Socioeconomic Resources - Secondary retail purchases would make an additional contribution to the local communities. The implementation of the proposed action, therefore, would provide a short-term, minimal beneficial impact to local retailers during the construction phase of the project.

Cultural Resources - The proposed action has little potential to impact cultural resources. In the unlikely event any such artifacts were discovered during the construction activities, the contractor would be instructed to halt construction and immediately notify Grand Forks AFB civil engineers who would notify the State Historic Preservation Officer.

Land Use - The proposed construction would not impact land use.

Transportation Systems – The proposed construction would not impact traffic patters on base.

Airspace/Airfield Operations - The proposed action would not impact aircraft safety or airspace compatibility.

Safety and Occupational Health – The proposed construction would improve the safety of base personnel and residents. The dumpster would be in compliance with JSIVA recommendations.

Environmental Management – The proposed action would not impact IRP Sites. BMPs would be implemented to prevent erosion. No pesticides would be used as part of this project.

Environmental Justice - EO 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no minority or low-income populations in the area of the proposed action or alternatives, and, thus, there would be no disproportionately high or adverse impact on such populations.

1.0 PURPOSE OF AND NEED FOR PROPOSED ACTION

This Environmental Assessment (EA) examines the potential for impacts to the environment resulting from the construction of a dumpster screen for the dumpster located near Sunflower Chapel on Grand Forks Air Force Base (AFB). As required by the *National Environmental Policy Act* (NEPA) of 1969, federal agencies must consider environmental consequences in their decision making process. The EA provides analysis of the potential environmental impacts from both the proposed action and its alternatives.

1.1 INTRODUCTION

Located in northeastern North Dakota (ND), Grand Forks AFB is the first core refueling wing in Air Mobility Command (AMC) and home to 48 KC-135R Stratotanker aircraft. The host organization at Grand Forks AFB is the 319th Air Refueling Wing (ARW). Its mission is to guarantee global reach, by extending range in the air, supplying people and cargo where and when they are needed and provides air refueling and airlift capability support to Air Force (AF) operations anywhere in the world, at any time. Organizational structure of the 319th ARW consists primarily of an operations group, maintenance group, mission support group, and medical group.

The location of the proposed action (and the alternative actions) would be at Grand Forks AFB, ND. Grand Forks AFB covers approximately 5,420 acres of government-owned land and is located in northeastern ND, about 14 miles west of Grand Forks, along United States (US) Highway 2. Grand Forks (population 49,321) is the third largest city in ND. Appendix A includes a Location Map. The city, and surrounding area, is a regional center for agriculture, education, and government. It is located approximately 160 miles south of Winnipeg, Manitoba, and 315 miles northwest of Minneapolis, Minnesota. The total base population, as of May 2003, is approximately 6, 934. Of that, 2,849 are military, 3,747 are military dependents, and 338 civilians working on base (Grand Forks AFB, 2003).

The Sunflower Chapel is located at 1699 J Street on Grand Forks AFB, North Dakota. The Chapel is located on the corner of J Street and 7th Avenue. The dumpster screen would be constructed on the west edge of the parking lot located south of the Chapel. The parking lot is north of the Child Development Center and the Kiddie Campus.

1.2 NEED FOR THE ACTION

Grand Forks AFB needs to comply with required military force protection standards. The 2003 Joint Staff Integrated Vulnerability Assessment (JSIVA) recommended the all dumpsters be screened because exposed dumpsters located on Grand Forks AFB are vulnerabilities to the safety and security of the base. The Sunflower Chapel is a "soft target" and extra screening measures must be taken. Currently, the dumpster does not have any screening. The dumpster is for official use only but, without proper screening measures, hazardous and unofficial materials may be thrown in threatening both military members and their families. Also without proper

screening, unauthorized waste may be dumped increasing the base disposal costs. Exposed dumpsters also negative affect the appearance of base facilities reducing the quality of life.

1.3 OBJECTIVES FOR THE ACTION

The objective of the proposed action is to construct a dumpster screen for the dumpster located near Sunflower Chapel in order to comply with the JSIVA recommendations.

1.4 SCOPE OF EA

This EA identifies, describes, and evaluates the potential environmental impacts associated with construction of dumpster screen near Sunflower Chapel on Grand Forks AFB. This analysis covers only those items listed above. It does not include any previous construction of facilities, parking lots, associated water drainage structures, or other non-related construction activities.

The following must be considered under the NEPA, Section 102(E).

- Air Quality
- Noise
- Wastes, Hazardous Materials, and Stored Fuels
- Water Resources
- Biological Resources
- Socioeconomic Resources
- Cultural Resources
- Land Use
- Transportation Systems
- Airspace/Airfield Operations
- Safety and Occupation Health
- Environmental Management
- Environmental Justice

1.5 DECISION(S) THAT MUST BE MADE

This EA evaluates the environmental consequences construction of a dumpster screen near the Sunflower Chapel on Grand Forks AFB. NEPA requires that environmental impacts be considered prior to final decision on a proposed project. The Environmental Management Flight Chief will determine if a Finding of Significant Impact can be signed or if an Environmental Impact Statement (EIS) must be prepared. Preparation of an environmental analysis must be accomplished prior to a final decision regarding the proposed project and must be available to inform decision makers of potential environmental impacts of selecting the proposed action or either of the alternatives.

1.6 APPLICABLE REGULATORY REQUIREMENTS AND REQUIRED COORDINATION

These regulations require federal agencies to analyze potential environmental impacts of proposed actions and alternatives and to use these analyses in making decisions on a proposed action. All cumulative effects and irretrievable commitment of resources must also be assessed during this process. The Council on Environmental Quality (CEQ) regulations declares that an EA is required to accomplish the following objectives:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when an EIS is not necessary, and facilitate preparation of an EIS when necessary.

Air Force Instruction (AFI) 32-7061 as promulgated in 32 Code of Federal Regulations (CFR) 989, specifies the procedural requirements for the implementation of NEPA and the preparation of an EA. Other environmental regulatory requirements relevant to the Proposed Action and alternatives are also in this EA. Regulatory requirements including, but not restricted to the following programs will be assessed:

- AF Environmental Impact Analysis Process (EIAP) (32 CFR 989)
- AFI 32-7020, Environmental Restoration Program
- AFI 32-7040, Air Quality Compliance
- AFI 32-7041, Water Quality Compliance
- AFI 32-7042, Solid and Hazardous Waste Compliance
- AFI 32-7063, Air Installation Compatible Use Zone (AICUZ) Program
- AFI 32-7064, Integrated Natural Resource Management
- Archaeological Resources Protection Act (ARPA) [16 U.S.C. Sec 470a-11, *et seq.*, as amended]
- Clean Air Act (CAA) [42 U.S.C. Sec 7401, *et seq.*, as amended]
- Clean Water Act (CWA) [33 U.S.C. Sec 400, *et seq.*]
- CWA [33 U.S.C. Sec 1251, *et seq.*, as amended]
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) [42 U.S.C. Sec. 9601, et seq.]
- Defense Environmental Restoration Program [10 U.S.C. Sec. 2701, et seq.]
- Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 [42 U.S.C. Sec. 11001, et seq.]
- Endangered Species Act (ESA) [16 U.S.C. Sec 1531-1543, *et seq.*]
- Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality as Amended by EO 11991
- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- EO 12372, Intergovernmental Review of Federal Programs

- EO 12898, Environmental Justice
- EO 12989 Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks
- Hazardous Materials Transportation Act of 1975 [49 U.S.C. Sec 1761, et seq.]
- NEPA of 1969 [42 U.S.C. Sec 4321, *et seq.*]
- National Historic Preservation Act (NHPA) of 1966 [16 U.S.C. Sec 470, *et seq.*, as amended]
- The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 [Public Law 101-601, 25 U.S.C. Sec. 3001-3013, *et seq.*]
- Noise Control Act of 1972 [42 U.S.C. Sec. 4901, *et seq.*, Public Law 92-574]
- ND Air Pollution Control Act (Title 23) and Regulations
- ND Air Quality Standards (Title 33)
- ND Hazardous Air Pollutants Emission Standards (Title 33)
- Occupational Safety and Health Act (OSHA) of 1970 [29 U.S.C. Sec. 651, et seq.]
- Resource Conservation and Recovery Act (RCRA) of 1976 [42 U.S.C. Sec. 6901, et seq.]
- Toxic Substances Control Act (TSCA) of 1976 [15 U.S.C. Sec. 2601, et seq.]

Grand Forks AFB has a National Pollutant Discharge Elimination System (NPDES) permit to cover base-wide industrial activities. Construction of the proposed action or alternative 2 would disturb less than one acre. The proposed action would not require a separate construction permit from the North Dakota Department of Health (NDDH).

Scoping for this EA included discussion of relevant issues with members of the environmental management and bioenvironmental flights. Scoping letters requesting comments on possible issues of concern were sent to agencies with pertinent resource responsibilities. In accordance with AFI 32-7061, a copy is submitted to the ND Division of Community Services.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

Based on the descriptions of the relevant environmental resources presented in Section 3 and the predictions and analyses presented in Section 4, this section presents a comparative summary matrix of the alternatives (the heart of the analysis) providing the decision maker and the public with a clear basis for choice among the alternatives.

This section has five parts:

- Selection Criteria for Alternatives
- Alternatives Considered but Eliminated from Detailed Study
- Detailed Descriptions of the Three Alternatives Considered
- Comparison of Environmental Effects of the Proposed Action and Alternatives
- Identification of the Preferred Alternative

2.2 SELECTION CRITERIA FOR ALTERNATIVES

Selection criteria used to evaluate the Proposed and Alternative Actions include the following:

- *Criteria 1: Compliance with JSIVA recommendations.*

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

No alternatives were eliminated from detailed study.

2.4 DESCRIPTION OF PROPOSED ALTERNATIVES

This section describes the activities that would occur under three alternatives: the proposed action and the two action alternatives. These three alternatives provide the decision maker with a reasonable range of alternatives from which to choose.

2.4.1 Alternative 1 (Proposed Action): Construct Dumpster Screen

Under this alternative, Grand Forks AFB would construct a dumpster screen around the dumpster located near Sunflower Chapel. Project would include all necessary masonry, construction, site preparation, and excavation.

2.4.2 Alternative 2: Utilize Alternate Dumpster

Alternative 2 would not construct a dumpster screen around the dumpster located near Sunflower Chapel. The dumpster would be removed and personnel that currently utilize the dumpster would be forced to find another to dispose of their facilities garbage.

2.4.3 Alternative 3 (No Action Alternative): Status Quo

Alternative 3, no action alternative, would not construct a dumpster screen around the dumpster located near Sunflower Chapel. Grand Forks AFB would not be in compliance with JSIVA recommendations. Hazardous and unofficial materials could continue to be thrown in the dumpster threatening both military members and their families. Unauthorized waste could continue to be dumped increasing base disposal costs. The appearance of the dumpster would continue to negatively affect the appearance of base facilities and reduce quality of life.

2.5 DESCRIPTION OF PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS RELEVANT TO CUMULATIVE IMPACTS

Impacts from the Proposed Action would be concurrent with other actions occurring at Grand Forks AFB. There are several other construction and demolition projects occurring on Grand Forks AFB in the same time frame. These projects are addressed under separate NEPA documents.

2.6 SUMMARY COMPARISON OF THE EFFECTS OF ALL ALTERNATIVES

Potential impacts from implementing the Proposed Action, Alternative 2, and the No Action Alternative are discussed in detail in Chapter 4.

Table 2.6.1: Summary of Environmental Impacts

	Proposed Action	Alternative 1	No Action Alternative
Legend: ST = short-term; LT = long-term			
Air Quality	Minor Adverse ST Impact	None	None
Noise	Minor Adverse ST Impact	Minor Beneficial LT Impact	None
Wastes, Hazardous Materials, and Stored Fuels	Minor Adverse ST Impact	None	None
Water Resources			
Groundwater	Minor Adverse ST Impact	None	None
Surface Water	Minor Adverse ST Impact	None	None
Wastewater	None	None	None
Water Quality	Minor Adverse ST Impact	None	None
Wetlands	None	None	None
Biological Resources			
Vegetation	Minor Adverse LT Impact	Minor Beneficial LT Impact	None
Wildlife	Minot Adverse LT Impact	Minot Beneficial LT Impact	None
Threatened and Endangered Species	None	None	None
Socioeconomic Resources	Minor Beneficial ST Impact	None	None
Cultural Resources	None	None	None
Land Use	None	None	None
Transportation Systems	None	None	None

Table 2.6.1: Summary of Environmental Impacts			
	Proposed Action	Alternative 1	No Action Alternative
Airspace/Airfield Operations			
Aircraft Safety	None	None	None
Airspace Compatibility	None	None	None
Safety and Occupational Health	Minor Beneficial LT Impact	None	None
Environmental Management			
Installation Restoration Program	None	None	None
Geological Resources	Minor Adverse ST Impact	None	None
Pesticide Management	None	None	None
Environmental Justice	None	None	None

2.7 IDENTIFICATION OF PREFERRED ALTERNATIVE

The preferred action is Alternative 1 (Proposed Action): *Construct Dumpster Screen.*

3.0 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section succinctly describes the operational concerns and the environmental resources relevant to the decision that must be made concerning this proposed action. Environmental concerns and issues relevant to the decision to be made and the attributes of the potentially affected environment are studied in greater detail in this section.

This descriptive section, combined with the definitions of the three alternatives in Section 2, and their predicted effects in Section 4, establish the scientific baseline against which the decision-maker and the public can compare and evaluate the activities and effects of all three alternatives.

3.2 AIR QUALITY

Grand Forks AFB has a humid continental climate that is characterized by frequent and drastic weather changes. The summers are short and humid with frequent thunderstorms. Winters are long and severe with almost continuous snow cover. The spring and fall seasons are generally short transition periods. The average annual temperature is 40°Farenheit (F) and the monthly mean temperature varies from 6°F in January to 70°F in July. Mean annual precipitation is 19.5 inches. Rainfall is generally well distributed throughout the year, with summer being the wettest season and winter the driest. An average of 34 thunderstorm days per year is recorded, with some of these storms being severe and accompanied by hail and tornadoes. Mean annual snowfall recorded is 40 inches with the mean monthly snowfall ranging from 1.6 inches in October to 8.0 inches in March. Relative humidity averages 58 percent annually, with highest humidities being recorded in the early morning. The average humidity at dawn is 76 percent. Mean cloud cover is 48 percent in the summer and 56 percent in the winter (USAF, 2003).

Table 3.2-1: Climate Data for Grand Forks AFB, ND

	Mean Temperature (°F) Daily			Precipitation (Inches) Monthly		
Month	Maximum	Minimum	Monthly	Mean	Maximum	Minimum
January	15	-1	6	0.7	2.4	0.1
February	21	5	13	0.5	3.2	0.0
March	34	18	26	1.0	2.9	0.0
April	53	32	41	1.5	4.0	0.0
May	69	47	56	2.5	7.8	0.5
June	77	56	66	3.0	8.1	0.8
July	81	61	70	2.7	8.1	0.5
August	80	59	67	2.6	5.5	0.1
September	70	49	57	2.3	6.2	0.3
October	56	37	44	1.4	5.7	0.1
November	34	20	26	0.7	3.3	0.0
December	20	6	12	0.6	1.4	0.0

Source: AFCCC/DOO, October 1998

Wind speed averages 10 miles per hour (mph). A maximum wind speed of 74 mph has been recorded. Wind direction is generally from the northwest during the late fall, winter, and spring, and from the southeast during the summer.

Grand Forks County is included in the ND Air Quality Control Region. This region is in attainment status for all criteria pollutants. In 1997, the ND Department of Health (NDDH) conducted an Air Quality Monitoring Survey that indicated that the quality of ambient air in ND is generally good as it is located in an attainment area (NDDH, 1998). Grand Forks AFB has the following air permits: T5-F78004 (permit to operate) issued by NDDH and a CAA Title V air emissions permit.

The United States Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS), which define the maximum allowable concentrations of pollutants that may be reached, but not exceeded within a given time period. The NAAQS regulates the following criteria pollutants: Ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and particulate matter. The ND Ambient Air Quality Standards (NDAAQS) were set by the State of ND. These standards are more stringent and emissions for operations in ND must comply with the Federal or State standard that is the most restrictive. There is also a standard for hydrogen sulfide (H_2S) in ND.

Prevention of significant deterioration (PSD) regulations establish SO_2 and total suspended particles (TSP) that can be emitted above a premeasured amount in each of three class areas. Grand Forks AFB is located in a PSD Class II area where moderate, well-controlled industrial growth could be permitted. Class I areas are pristine areas and include national parks and wilderness areas. Significant increases in emissions from stationary sources (100 tons per year (tpy) of CO, 40 tpy of NO_X, VOCs, or SO_X, or 15 tpy of particulate matter 10 microns in diameter [PM_{10}]) and the addition of major sources requires compliance with PSD regulations.

Air pollutants include O_3, CO, NO_2, SO_2, Pb, and particulate matter. Ground disturbing activities create PM_{10} and particulate matter 25 microns in diameter ($PM_{2.5}$). Combustion creates CO, SO_2, $PM_{10,}$ and $PM_{2.5}$ particulate matter and the precursors (volatile organic compounds [VOC] and NO_2) to O_3. Only a small amount of Hazardous Air Pollutants (HAP) are generated from internal combustion processes or earth-moving activities. The Grand Forks AFB Final Emissions Survey Report (USAF, 1996) reported that Grand Forks AFB only generated small levels HAPs, 10.3 tpy of combined HAPs and 2.2 tpy maximum of a single HAP (methyl ethyl ketone). Methyl Ethyl Ketone is associated with aircraft and vehicle maintenance and repair. Secondary sources include fuel storage and dispensing (USAF, 2001a).

Table 3.2-2
National Ambient Air Quality Standards (NAAQS) and ND Ambient Air Quality Standards (NDAAQS)

Pollutant	Averaging Time	NAAQS $\mu g/m^3$ (ppm)[a]		NDAAQS $\mu g/m^3$ (ppm)[a]
		Primary[b]	Secondary[c]	
O_3	1 hr	235 (0.12)	Same	Same
	8 hr[e]	157 (0.08)	Same	
CO	1 hr	40,000 (35)	None	40 (35)
	8 hr	10,000 (9)	None	10 (9)
NO_2	AAM[d]	100 (0.053)	Same	Same
SO_2	1 hr	None	None	715 (0.273)
	3 hr	None	1,300 (0.5)	None
	24 hr	365 (0.14)	None	260 (0.099)
	AAM	80 (0.03)	None	60 (0.023)
PM_{10}	AAM	50	Same	Same
	24 hr	150	Same	Same
$PM_{2.5}$[e]	AAM	65	Same	None
	24 hr	15	Same	None
Pb	¼ year	1.5	Same	Same
H_2S	1 hr	None	None	280 (0.20)
	24 hr	None	None	140 (0.10)
	3 mth	None	None	28 (0.02)
	AAM	None	None	14 (10)

[a] $\mu g/m^3$ – micrograms per cubic meter; ppm – parts per million
[b] National Primary Standards establish the level of air quality necessary to protect the public health from any known or anticipated adverse effects of pollutant, allowing a margin of safety to protect sensitive members of the population.
[c] National Secondary Standards establish the level of air quality necessary to protect the public welfare by preventing injury to agricultural crops and livestock, deterioration of materials and property, and adverse impacts on the environment.
[d] AAM – Annual Arithmetic Mean.
[e] The Ozone 8-hour standard and the PM 2.5 standards are included for information only. A 1999 federal court ruling blocked implementation of these standards, which EPA proposed in 1997. EPA has asked the US Supreme Court to reconsider that decision (USEPA, 2000).
PM_{10} is particulate matter equal to or less than 10 microns in diameter.
$PM_{2.5}$ is particulate matter equal to or less than 2.5 microns in diameter.
Source: 40 CFR 50, ND Air Pollution Control Regulations – NDAC 33-15

3.3 NOISE

Noise generated on Grand Forks AFB consists mostly of aircraft, vehicular traffic and construction activity. Most noise is generated from aircraft during takeoff and landing and not from ground traffic. Noise levels are dependent upon type of aircraft, type of operations, and distance from the observer to the aircraft. Duration of the noise is dependent upon proximity of the aircraft, speed, and orientation with respect to the observer.

Table 3.3-1
Typical Decibel Levels Encountered in the Environment and Industry

Sound Level (dBa)	Maximum Exposure Limits	Source of Noise	Subjective Impression
10			Threshold of hearing
20		Still recording studio; Rustling leaves	
30		Quiet bedroom	
35		Soft whisper at 5 feet; Typical library	
40		Quiet urban setting (nighttime); Normal level in home	Threshold of quiet
45		Large transformer at 200 ft	
50		Private business office; Light traffic at 100 ft; Quiet urban setting (daytime)	
55		Window air conditioner; Men's clothing department in store	Desirable limit for outdoor residential area use (EPA)
60		Conversation speech; Data processing center	
65		Busy restaurant; Automobile at 100 ft	Acceptable level for residential land use
70		Vacuum cleaner in home; Freight train at 100 ft	Threshold of moderately loud
75		Freeway at 10 ft	
80		Ringing alarm clock at 2 ft; Kitchen garbage disposal; Loud orchestral music in large room	Most residents annoyed
85		Printing press; Boiler room; Heavy truck at 50 ft	Threshold of hearing damage for prolonged exposure
90	8 hr	Heavy city traffic	
95	4 hr	Freight train at 50 ft; Home lawn mower	
100	2 hr	Pile driver at 50 ft; Heavy diesel equipment at 25 ft	Threshold of very loud
105	1 hr	Banging on steel plate; Air Hammer	
110	0.5 hr	Rock music concert; Turbine condenser	
115	0.25 hr	Jet plane overhead at 500 ft	
120	< 0.25 hr	Jet plane taking off at 200 ft	Threshold of pain
135	< 0.25 hr	Civil defense siren at 100 ft	Threshold of extremely loud

Source: US Army, 1978

Table 3.3-2
Approximate Sound Levels (dBA) of Construction Equipment

Equipment Type	Sound Levels (dBA) at Various Distances (ft)					
	50	100	200	400	800	1,600
Front-end Loader	84	78	72	66	60	54
Dump Truck	83	77	71	65	59	53
Truck	83	77	71	65	59	53
Tractor	84	78	72	66	58	52

Source: Thurman, 1976; US Army, 1978

Because military installations attract development in proximity to their airfields, the potential exists for urban encroachment and incompatible development. The AF utilizes a program known

as AICUZ to help alleviate noise and accident potential problems due to unsuitable community development. AICUZ recommendations give surrounding communities alternatives to help prevent urban encroachment. Noise contours are developed from the Day-Night Average A-Weighted Sound Level (DNL) data which defines the noise created by flight operations and ground-based activities. The AICUZ also defines Accident Potential Zones (APZs), which are rectangular corridors extending from the ends of the runways. Recommended land use activities and densities in the APZs for residential, commercial, and industrial uses are provided in the base's AICUZ study. Grand Forks AFB takes measures to minimize noise levels by evaluating aircraft operations. Blast deflectors are utilized in designated areas to deflect blast and minimize exposure to noise.

3.4 WASTES, HAZARDOUS MATERIALS, AND STORED FUELS

Hazardous wastes, as listed under the RCRA, are defined as any solid, liquid, contained gaseous, or combination of wastes that pose a substantive or potential hazard to human health or the environment. On-base hazardous waste generation involves three types of on-base sites: an accumulation point (90-day), satellite accumulation points, and spill cleanup equipment and materials storage (USAF, 2001c). Discharge and emergency response equipment is maintained in accessible areas throughout Grand Forks AFB. The Fire Department maintains adequate fire response and discharge control and containment equipment. Equipment stores are maintained in buildings 523 and 530. Petroleum contaminated soils generated from excavations throughout the base can be treated at the land treatment facility located on base. These solid wastes are tilled or turned several times a year to remediate the soils to acceptable levels.

Hardfill, construction debris, and inert waste generated by Grand Forks AFB are disposed of at a permitted off-base landfill. All on-base household garbage and solid waste is collected by a contractor and transported to the Grand Forks County Landfill, which opened in 1982.

Recyclable materials from industrial facilities are collected in the recycling facility, off the southeast corner of building 408. Paper, glass, plastics, cardboard, and wood are collected in separate storage bins. Curbside containers are used in housing for recyclable materials. A contractor collects these materials and transports them off base.

The Environmental Management Flight manages the hazardous material through a contract with Pacific Environmental Services. Typical hazardous materials include reactive materials such as explosives, ignitiables, toxics, and corrosives. Improper storage can impact human health and the safety of the environment.

Since Grand Forks AFB is a military installation with a flying mission, there are several aboveground and underground fuel storage tanks. None of the alternatives would impact fuel storage tanks.

3.5 WATER RESOURCES

3.5.1 Groundwater

Chemical quality of groundwater is dependent upon the amount and type of dissolved gases, minerals, and organic material leached by water from surrounding rocks as it flows from recharge to discharge areas. The water table depth varies throughout the base, from a typical 1-3 feet to 10 feet or more below the surface.

Even though the Dakota Aquifer has produced more water than any other aquifer in Grand Forks County, the water is very saline and generally unsatisfactory for domestic and most industrial uses. Its primary use is for livestock watering. It is a sodium chloride type water with total dissolved solids concentrations of about 4,400 parts per million. The water generally contains excessive chloride, iron, sulfate, total dissolved solids, and fluoride. The water from the Dakota is highly toxic to most domestic plants and small grain crops, and in places, the water is too highly mineralized for use as livestock water (Hansen and Kume, 1970).

Water from wells tapping the Emerado Aquifer near Grand Forks AFB is generally of poor quality due to upward leakage of poor quality water from underlying bedrock aquifers. It is sodium sulfate type water with excessive hardness, chloride, sulfate, and total dissolved solids. Water from the Lake Agassiz beach aquifers is usually of good chemical quality in Grand Forks County. The water is a calcium bicarbonate type that is relatively soft. The total dissolved content ranges from 308 to 1,490 PPM. Most water from beach aquifers is satisfactory for industrial, livestock, and agricultural uses (Hansen and Kume, 1970).

Grand Forks AFB draws 85 to 90 percent of its water for industrial, commercial and housing functions from the City of Grand Forks and 10 to 15 percent from Agassiz Water.

3.5.2 Surface Water

Natural surface water features located on or near Grand Forks AFB are the Turtle River and Kellys Slough National Wildlife Refuge (NWR). Drainage from surface water channels ultimately flows into the Red River.

The Turtle River, crossing the base boundary at the northwest corner, is very sinuous and generally flows in a northeasterly direction. It receives surface water runoff from the western portion of Grand Forks AFB and eventually empties into the Red River of the North that flows north to Lake Winnipeg, Canada. The Red River drainage basin is part of the Hudson Bay drainage system. At Manvel, ND, approximately 10 miles northeast of Grand Forks AFB, the mean discharge of the Turtle River is 50.3 ft^3/s. Peak flows result from spring runoff in April and minimum flows (or no flow in some years) occur in January and February.

NDDH has designated the Turtle River to be a Class II stream, it may be intermittent, but, when flowing, the quality of the water, after treatment, meets the chemical, physical, and bacteriological requirements of the NDDH for municipal use. The designation also states that it

is of sufficient quality to permit use for irrigation, for propagation of life for resident fish species, and for boating, swimming, and other water recreation.

Kellys Slough NWR occupies a wide, marshy flood plain with a poorly defined stream channel, approximately two miles east and downstream of Grand Forks AFB. Kellys Slough NWR receives surface water runoff from the east half of the base and effluent from the base sewage lagoons located east of the base. Surface water flow of the slough is northeasterly into the Turtle River Drainage from surface water channels ultimately flowing into the Red River. Floodplains are limited to an area 250 feet on either side of Turtle River (about 46 acres on base). Appendix C contains a map depicting floodplains. Any development in or modifications to floodplains must be coordinated with the Corps of Engineers and the Federal Emergency Management Agency.

Surface water runoff leaves Grand Forks AFB at four primary locations related to identifiable drainage areas on base. The four sites are identified as northeast, northwest, west, and southeast related to the base proper. These outfalls were approved by the NDDH as stated in the Grand Forks AFB ND Pollutant Discharge Elimination System (NDPDES) Permit NDR02-0314 Stormwater Discharges from Industrial Activity. Of the four outfall locations, the west and northwest sites flow into the Turtle River, the northeast site flows to the north ditch and the southeast outfall flows into the south ditch. The latter two flow to Kellys Slough and then the Turtle River. All drainage from these surface water channels ultimately flows into the Red River. The Bioenvironmental Engineering Office samples the four outfall locations during months when de-icing activities occur on base.

3.5.3 Wastewater

Grand Forks AFB discharges its domestic and industrial wastewater to four stabilization lagoons located east of the main base. The four separate treatment cells consist of one primary treatment cell, two secondary treatment cells, and one tertiary treatment cell. Wastewater effluent is discharged under ND Permit ND0020621 into Kellys Slough. Wastewater discharge occurs for about one week, sometime between mid-April though October. Industrial wastewater at the base comprises less than ten percent of the total flow to the treatment lagoons.

3.5.4 Water Quality

According to the National Water Quality Inventory Report (USEPA, 1995), ND reports the majority of rivers and streams have good water quality. Natural conditions, such as low flows, can contribute to violations of water quality standards. During low flow periods, the rivers are generally too saline for domestic use. Grand Forks AFB receives water from Grand Forks and Lake Agassiz Water. The city recovers its water from the Red River and the Red Lake River, while the water association provides water from aquifers. The water association recovers water from well systems within glacial drift aquifers (USAF, 1999). The 319th Civil Engineering Squadron tests the water received on base daily for fluorine and chlorine. The 319th Bioenvironmental Flight collects monthly bacteriological samples to be analyzed at the ND State Laboratory.

3.5.5 Wetlands

About 246,900 acres in the county are drained wetland Type I (wet meadow) to Type V (open freshwater). Approximately 59,500 acres of wetland Type I to V are used for wetland habitat. Wetland Types IV and V include areas of inland saline marshes and open saline water. Kellys Slough NWR occupies a wide, marshy flood plain with a poorly defined stream channel, approximately two miles east and downstream of Grand Forks AFB. Kellys Slough NWR is the most important regional wetland area in the Grand Forks vicinity. EO 11990 requires zero loss of wetlands. Grand Forks AFB has 49 wetlands, covering 23.9 acres of wetlands (see Appendix C), including 33 jurisdictional wetlands covering 12.2 acres. Wetlands on Grand Forks AFB occur frequently in drainage ways, low-lying depressions, and potholes. Wetlands are highly concentrated in drainage ways leading from the wastewater treatment lagoons to Kellys Slough NWR. The majority of wetland areas occur in the northern and central portions of base, near the runway, while the remaining areas are near the eastern boundary and southeastern corner of base. Development in or near these areas must include coordination with the ND State Water Commission and the US Army Corps of Engineers.

3.6 BIOLOGICAL RESOURCES

3.6.1 Vegetation

Plants include a large variety of naturally occurring native plants. Because of the agrarian nature of Grand Forks County, cropland is the predominant element for wildlife habitat. Pastures, meadows, and other non-cultivated areas are overgrown with grasses, legumes, and wild herbaceous plants. Included in the grasses and legumes vegetation species are tall wheat grass, bromegrass, sweet clover, and alfalfa. Herbaceous plants include little bluestem, goldenrod, green needle grass, western wheat grass, and bluegrama. Shrubs such as juneberry, dogwood, hawthorn, and snowberry also are found in the area. In wetland areas, predominant species include smartweed, wild millet, cord grass, bulrushes, sedges, and reeds. These habitats for upland wildlife and wetland wildlife attract a variety of species to the area and support many aquatic species.

Various researchers, most associated with the University of ND, have studied current native floras in the vicinity of the base. Prior to 1993 field investigations, ten natural communities occurring in Grand Forks County were identified in the ND Natural Heritage Inventory (1994). Of these, only one community, Lowland Woodland, is represented within the base boundaries. Dominant trees in this community are elm, cottonwood, and green ash. Dutch elm disease has killed many of the elms. European buckthorn (a highly invasive exotic species), chokecherry, and wood rose (*Rosa woodsii)* are common in the understory in this area. Wood nettle (*Laportea canadensis*), stinging nettle (*Urtica dioica*), beggars' ticks (*Bidens frondosa*), and waterleaf (*Hydrophyllum viginianum*) are typical forbes.

One hundred and forty two total taxa, representing less than a third of the known Grand Forks County plant taxa, were identified in the ND Natural Heritage Inventory. No rare plants species are known to exist on Grand Forks AFB.

3.6.2 Wildlife

Ground Forks County is primarily cropland although there are wildlife areas located within the county. Kellys Slough NWR is located a couple miles northeast of Grand Forks AFB. In addition to being a wetland, it is a stopover point for migratory birds. The Prairie Chicken Wildlife Management Area is located north of Mekinock and contains 1,160 acres of habitat for deer, sharp-tailed grouse, and game birds. Wildlife can also be found at the Turtle River State Park, The Bremer Nature Trail, and the Myra Arboretum.

There is minimal habitat for wildlife on Grand Forks AFB due to extensive development. White tail deer, eastern cottontail, and ring-neck pheasant can be found on base. The proposed project area only provides low-quality foraging habitat for small animals.

3.6.3 Threatened and Endangered Species

According to the 1994 ND Natural Heritage Inventory, "There are no known federally threatened or endangered species populations on or adjacent to Grand Forks AFB." The base does have infrequent use by migratory threatened and endangered species, such as the bald eagle and peregrine falcon, but there are no critical or significant habitats for those species present. The inventory also indicated that red-breasted nuthatch and moose are two special concern species. They have been observed on base near Turtle River. The inventory also indicated that there is no habitat on or near Grand Forks AFB to sustain a moose population. Red-breasted nuthatches prefer woodland habitats dominated by conifers. These birds are transients and pose no particular concern. The ESA does require that Federal Agencies not jeopardize the existence of a threatened or endangered species nor destroy or adversely modify designated critical habitat for threatened or endangered species.

3.7 SOCIOECONOMIC RESOURCES

Grand Forks County is primarily an agricultural region and, as part of the Red River Valley, is one of the world's most fertile. Cash crops include sugar beets, beans, corn, barley, and oats. The valley ranks first in the nation in the production of potatoes, spring wheat, sunflowers, and durum wheat. Grand Forks County's population in 2000 was 66,109, a decrease of 6.5 percent from the 1990 population of 70,638 (ND State Data Center, No Date). Grand Forks County's annual mean wage in Oct 2001 was $26,715 (Job Service of ND, 2001). Grand Forks AFB is one of the largest employers in Grand Forks County. As of May 2003, Grand Forks AFB had 3, 165 active duty military members and 338 civilian employees. The total annual economic impact for Grand Forks AFB is $325,647, 980.

3.8 CULTURAL RESOURCES

According to the Grand Forks AFB Cultural Resources Management Plan, there are no archeological sites that are potentially eligible for the National Register of Historic Places (NRHP). A total of six archeological sites and six archeological find spots have been identified on the base. None meet the criteria of eligibility of the NRHP established in 36 CFR 60.4. There is no evidence for Native American burial grounds, or other culturally sensitive areas. Paleosols (soil that developed on a past landscape) remain a management concern requiring Section 106 compliance. Reconnaissance-level archival and archeological surveys of Grand Forks AFB conducted by the University of ND in 1989 indicated that there are no facilities (50 years or older) that possess historical significance. The base is currently consulting with the ND Historical Society on the future use of eight Cold War Era facilities. These are buildings 313, 606, 703-707, and 714.

3.9 LAND USE

Land use in Grand Forks County consists primarily of cultivated crops with remaining land used for pasture and hay, urban development, recreation, and wildlife habitat. Principal crops are spring wheat, barley, sunflowers, potatoes, and sugar beets. Turtle River State Park, developed as a recreation area in Grand Forks County, is located about five miles west of the base. Several watershed protection dams are being developed for recreation activities including picnicking, swimming, and ball fields. Wildlife habitat is very limited in the county. Kellys Slough NWR (located about two miles east of the base) and the adjacent National Waterfowl Production Area are managed for wetland wildlife and migratory waterfowl, but they also include a significant acreage of open land wildlife habitat.

The main base encompasses 5,420 acres, of which the AF owns 4,830 acres and another 590 acres are lands containing easements, permits, and licenses. Improved grounds, consisting of all covered area (under buildings and sidewalks), land surrounding base buildings, the 9-hole golf course, recreational ballfields, and the family housing area, encompass 1,120 acres. Semi-improved grounds, including the airfield, fence lines and ditch banks, skeet range, and riding stables account for 1,390 acres. The remaining 2,910 acres of the installation consist of unimproved grounds. These areas are comprised of woodlands, open space, and wetlands, including four lagoons (180.4 acres) used for the treatment of base wastewater. Agricultural outleased land (1,040 acres) is also classified as unimproved. Land use at the base is solely urban in nature, with residential development to the south and cropland, hayfields, and pastures to the north, west, and east.

3.10 TRANSPORATION SYSTEMS

Seven thousand vehicles per day travel ND County Road B3 from Grand Forks AFB's east gate to the US Highway 2 Interchange (Clayton, 2001). Two thousand vehicles per day use the off-ramp from US Highway 2 onto ND County Road B3 (Dunn, 2001). US Highway 2, east of the base interchange, handles 10,800 vehicles per day. (Kingsley and Kuntz, 2001). A four lane arterial road has a capacity of 6,000 vehicles per hour and a two lane, 3,000, based on the average

capacity of 1,500 per hour per lane. Roadways adjacent to Grand Forks AFB are quite capable of accommodating existing traffic flows (USAF, 2001a).

Grand Forks AFB has good traffic flow even during peak hours (6-8 am and 4-6 pm). There are two gates: the main gate located off of County Road B-3, about one mile north of U.S. Highway 2, and the Secondary Gate located off of U.S. Highway 2, about 3/4 mile west of County Road B-3. The main gate is connected to Steen Blvd, which is the main east-west road, and the south gate is connected to Eielson St, which is the main north-south road.

3.11 AIRSPACE/AIRFIELD OPERATIONS

3.11.1 AIRCRAFT SAFETY

Bird Aircraft Strike Hazard (BASH) is a major safety concern for military aircraft. Collision with birds may result in aircraft damage and aircrew injury, which may result in high repair costs or loss of the aircraft. A BASH hazard exists at Grand Forks AFB and its vicinity, due to resident and migratory birds. Daily and seasonal bird movements create various hazardous conditions. Although BASH problems are minimal, Kellys Slough NWR is a major stopover for migratory birds. Canadian Geese and other large waterfowl have been seen in the area (USAF, 2001b).

3.11.2 AIRSPACE COMPATIBILITY

The primary objective of airspace management is to ensure the best possible use of available airspace to meet user needs and to segregate requirements that are incompatible with existing airspace or land uses. The Federal Aviation Administration has overall responsibility for managing the nation's airspace and constantly reviews civil and military airspace needs to ensure all interests are compatibly served to the greatest extent possible. Airspace is regulated and managed through use of flight rules, designated aeronautical maps, and air traffic control procedures and separation criteria.

3.12 SAFETY AND OCCUPATIONAL HEALTH

Safety and occupational health issues include one-time and long-term exposure. Examples include asbestos/radiation/chemical exposure, explosives safety quantity-distance, and bird/wildlife aircraft hazard. Safety issues include injuries or deaths resulting from a one-time accident. Aircraft Safety includes information on birds/wildlife aircraft hazards and the BASH program. Health issues include long-term exposure to chemicals such as asbestos and lead-based paint. Safety and occupational health concerns could impact personnel working on the project and in the surrounding area.

The National Emission Standards for Hazardous Air Pollutants (NESHAP) of the CAA designates asbestos as HAP. OSHA provides worker protection for employees who work around or asbestos containing material (ACM). Regulated ACM (RACM) includes thermal system

insulation (TSI), any surfacing material, and any friable asbestos material. Non-regulated Category I non-friable ACM includes floor tile and joint compound.

Lead exposure can result from paint chips or dust or inhalation of lead vapors from torch-cutting operations. This exposure can affect the human nervous system. Due to the size of children, exposure to lead based paint is especially dangerous to small children. OSHA considers all painted surfaces in which lead is detectable to have a potential for occupational health exposure.

3.13 ENVIRONMENTAL MANAGEMENT

3.13.1 INSTALLATION RESTORATION PROGRAM

The Installation Restoration Program (IRP) is the AF's environmental restoration program based on the CERCLA. CERCLA provides for Federal agencies with the authority to inventory, investigate, and clean up uncontrolled or abandoned hazardous waste sites. There are seven IRP sites at Grand Forks AFB. These sites are identified as potentially impacted by past hazardous material or hazardous waste activities. They are the Fire Training Area/Old Sanitary Landfill Area, New Sanitary Landfill Area, Strategic Air Ground Equipment (SAGE) Building 306, Explosive Ordnance Detonation Area, Refueling Ramps and Pads, Base Tanks Area, and POL Off-Loading Area (USAF, 1997b). Two sites are considered closed, OT-05 and ST-06. ST-08 has had a remedial investigation/feasibility study (RI/FS) completed and the rest are in long-term monitoring. Grand Forks AFB is not on the National Priorities List (NPL)

3.13.2 GEOLOGICAL RESOURCES

3.13.2.1 Physiography and Topography

The topography of Grand Forks County ranges from broad, flat plains to gently rolling hills that were produced mainly by glacial activity. Local relief rarely exceeds 100 feet in one mile, and, in parts of the lake basin, less than five feet in one mile.

Grand Forks AFB is located within the Central Lowlands physiographic province. The topography of Grand Forks County, and the entire Red River Valley, is largely a result of the former existence of Glacial Lake Agassiz, which existed in this area during the melting of the last glacier, about 12,000 years ago (Stoner et al., 1993). The eastern four-fifths of Grand Forks County, including the base, lies in the Agassiz Lake Plain District, which extends westward to the Pembina escarpment in the western portion of the county. The escarpment separates the Agassiz Lake Plain District from the Drift Plain District to the west. Glacial Lake Agassiz occupied the valley in a series of recessive lake stages, most of which were sufficient duration to produce shoreline features inland from the edge of the lake. Prominent physiographic features of the Agassiz Lake Plain District are remnant lake plains, beaches, inter-beach areas, and delta plains. Strandline deposits, associated with fluctuating lake levels, are also present and are indicated by narrow ridges of sand and gravel that typically trend northwest-southwest in Grand Forks County.

Grand Forks AFB lies on a large lake plain in the eastern portion of Grand Forks County. The lake plain is characterized by somewhat poorly drained flats and swells, separated by poorly drained shallow swells and sloughs (Doolittle et al., 1981). The plain is generally level, with local relief being less that one foot. Land at the base is relatively flat, with elevations ranging from 880 to 920 feet mean sea level (MSL) and averaging about 890 feet MSL. The land slopes to the north at less than 12 feet per mile

3.13.2.2 Soil Type Condition

Soils consist of the Gilby loam series that are characterized by deep, somewhat poorly drained, moderately to slowly permeable soils in areas between beach ridges. The loam can be found from 0 to 12 inches. From 12 to 26 inches, the soil is a mixture of loam, silt loam, and very fine sandy loam. From 26 to 60 inches, the soil is loam and clay loam.

3.13.3 PESTICIDE MANAGEMENT

Pesticides are handled at various facilities including Environmental Controls, Golf Course Maintenance, and Grounds Maintenance. Other organizations assist in the management of pesticides and monitoring or personnel working with pesticides. Primary uses are for weed and mosquito control. Herbicides, such as Round-up, are used to maintain areas adjacent to roadways. Military Public Health and Bioenvironmental Engineering provide information on the safe handling, storage, and use of pesticides. Military Public Health maintains records on all pesticide applicators. The Fire Department provides emergency response in the event of a spill, fire, or similar type incident.

3.14 ENVIRONMENTAL JUSTICE

Environmental justice addresses the minority and low-income characteristics of the area, in this case Grand Forks County. The county is more than 93 percent Caucasian, 2.3 percent Native American, 1.4 percent African-American, 1 percent Asian/Pacific Islander, less than 1 percent Other, and 1.6 percent "Two or more races". In comparison, the US is 97.6 percent Caucasian, 12.3 African-American, 0.9 percent Native American or Native Alaskan, 3.6 percent Asian, 0.1 Native Hawaiian or Pacific Islander, 5.5 percent Other, and 2.4 percent "Two or more races". Approximately 12.5 percent of the county's population is below the poverty level in comparison to 13.3 percent the state (US Bureau of the Census, 2002). There are few residences and no concentrations of low-income or minority populations around Grand Forks AFB.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

The effects of the proposed action and the alternatives on the affected environment are discussed in this section. The project involves the construction of a dumpster screen near Sunflower Chapel on Grand Forks AFB.

4.2 AIR QUALITY

4.2.1 Alternative 1 (Proposed Action)

Construction activities would result in a short-term minimal increase of criteria air pollutants, as fuel (gasoline and diesel) that is burned by internal combustion engine power construction and earth-moving equipment. Heavy construction equipment would generate the most emissions. The constituents of exhaust include CO, NO_x, and VOCs. Earth moving activities would generate fugitive dust (PM_{10}). Fugitive dust emissions and construction vehicle exhaust would be generated by all phases of construction, but the dust would be controlled to the maximum extent possible by utilizing wind barriers and stabilizing the exposed soil. BMPs to reduce fugitive emissions, such as daily watering of the disturbed ground and replacing ground cover in disturbed areas as quickly as possible, would be implemented to the maximum extent possible to reduce the amount of these emissions. This short-term increase in combustion related pollutants would occur only during construction and impacts to air quality would not be significant. Air Quality in ND is considered good and the area is in attainment for all criteria pollutants.

4.2.2 Alternative 2

Alternative 2 would not impact air quality.

4.2.3 Alternative 3 (No Action)

The no action alternative would not impact air quality.

4.3 NOISE

4.3.1 Alternative 1 (Proposed Action)

The short-term operation of heavy equipment in the construction area would generate additional noise. These noise impacts would exist only during construction and would cease after completion. The increase in noise from construction activities would be negligible.

4.3.2 Alternative 2

Alternative 2 would generate less noise as dump trucks would no longer travel to and from the site to remove garbage.

4.3.3 Alternative 3 (No Action)

The no action alternative would not impact noise generation.

4.4 WASTES, HAZARDOUS MATERIALS, AND STORED FUELS

4.4.1 Alternative 1 (Proposed Action)

The increase in hazardous and solid wastes from construction related activities would be minimal and temporary. Construction debris would be disposed of in approved location, such as the Grand Forks Municipal Landfill, which is located within 12 miles of the construction site. Consideration must be given to the disposition of the poles and the transformers.

4.4.2 Alternative 2

Alternative 2 would not impact wastes, hazardous materials, or stored fuels.

4.4.3 Alternative 3 (No Action)

The no action alternative would not impact wastes, hazardous materials, or stored fuels.

4.5 WATER RESOURCES

4.5.1 Alternative 1 (Proposed Action)

Groundwater: The proposed action would not impact ground water.

Surface Water: Surface water quality could degrade in the short-term, during actual construction, due to possible erosion contributing to turbidity of runoff and due to possible contamination from spills, leaks from construction equipment. The operator shall utilize effective methods to control surface water runoff and to minimize erosion. Proper stabilization and seeding the site immediately upon completion of the construction would provide beneficial vegetation to control erosion. Provided BMPs are utilized during construction, negative surface water impacts should be minimal.

Water Quality: Provided all containment needs are met and BMPs are used, the proposed action would have minimal impact to water quality.

Wastewater: The proposed action would have no impact on wastewater.

Wetlands: The proposed action would have no impact on wetlands.

4.5.2 Alternative 2

Alternative 2 would not impact water resources.

4.5.3 Alternative 3 (No Action)

The no action alternative would not impact on water resources.

4.6 BIOLOGICAL RESOURCES

4.6.1 Alternative 1 (Proposed Action)

Vegetation: BMPs and control measures, including silt fences and covering of stockpiles, would be implemented to ensure that impacts to biological resources be kept to a minimum. The amount of vegetation disturbed would be kept to the minimum required to complete the action. Disturbed areas would be re-established. There would be a short-term minimal loss of vegetation from the construction of the dumpster screen.

Wildlife: Construction would have insignificant impacts to wildlife. These areas provide low quality foraging habitat for small mammals, such as mice and rabbits. The area is improved and frequently maintained by the grounds maintenance contractor. Due to the abundance and mobility of these species and the profusion of natural habitats in the general vicinity, any wildlife disturbed would be able to find similar habitat in the local area.

Threatened or Endangered Species: According to the 1994 ND Natural Heritage Inventory (1994), "There are no known federally threatened or endangered species populations on or adjacent to Grand Forks AFB." The construction area does not include optimal habitat for any of the transient federal-or state-listed species that may occur in Grand Forks County.

4.6.2 Alternative 2

Alternative would restore the dumpster area back to original vegetative conditions.

4.6.3 Alternative 3 (No Action)

The no action alternative would not impact biological resources.

4.7 SOCIOECONOMIC RESOURCES

4.7.1 Alternative 1 (Proposed Action)

Construction of the dumpster screen would be constructed by a contractor. Secondary retail purchases would make an additional contribution to the local communities. The implementation of the proposed action, therefore, would provide a short-term, minimal beneficial impact to local retailers during the construction phase of the project.

4.7.2 Alternative 2

Alternative 2 would not impact socioeconomics.

4.7.3 Alternative 3 (No Action)

The no action alternative would not impact socioeconomics.

4.8 CULTURAL RESOURCES

4.8.1 Alternative 1 (Proposed Action)

The proposed action has little potential to impact cultural resources. In the unlikely event any such artifacts were discovered during the construction activities, the contractor would be instructed to halt construction and immediately notify Grand Forks AFB civil engineers who would notify the State Historic Preservation Officer.

4.8.2 Alternative 2

Alternative 2 would not impact cultural resources.

4.8.3 Alternative 3 (No Action)

The no action alternative would not impact cultural resources.

4.9 LAND USE

4.9.1 Alternative 1 (Proposed Action)

The proposed construction would not impact land use.

4.9.2 Alternative 2

Alternative 2 would not impact land use.

4.9.3 Alternative 3 (No Action)

The no action alternative would not impact land use.

4.10 TRANSPORTATION SYSTEMS

4.10.1 Alternative 1 (Proposed Action)

The proposed action would not impact transportation.

4.10.2 Alternative 2

Alternative 2 would not impact transportation.

4.10.3 Alternative 3 (No Action)

The action would not impact transportation.

4.11 AIRSPACE/AIRFIELD OPERATIONS

4.11.1 Alternative 1 (Proposed Action)

The proposed action would not impact aircraft safety or airspace compatibility.

4.11.2 Alternative 2

The action would not impact aircraft safety or airspace compatibility.

4.11.3 Alternative 3 (No Action)

The no action alternative would not impact aircraft safety or airspace compatibility.

4.12 SAFETY AND OCCUPATIONAL HEALTH

4.12.1 Alternative 1 (Proposed Action)

Under the proposed action, the dumpster would be in compliance with required military force protection standards improving the safety of base personnel.

4.12.2 Alternative 2

Alternative 2 would not impact safety and occupation health.

4.12.3 Alternative 3 (No Action)

The no action alternative would not change current safety conditions of base personnel although the dumpster would remain out of compliance with required military force protection standards.

4.13 ENVIRONMENTAL MANAGEMENT

4.13.1.1 Alternative 1 (Proposed Action)

IRP: The proposed action would have no impact on an IRP Sites.

Geology: Sediment located at the proposed construction site would be temporarily disturbed during construction. Underlying geology in some areas could be affected by construction activities. BMPs would be implemented to prevent erosion. The hazard of wind erosion is moderate and considerable erosion could occur on stockpiled soils. BMPs, such as daily watering and revegetating soils as soon as possible would reduce the impacts of erosion. At the conclusion of construction, the disturbed soils would be rolled and reseeded.

Pesticides: No pesticides would be used as part of this project.

4.13.1.2 Alternative 2

Alternative 2 would not impact IRP Sites or geological resources. No pesticides would be used as part of the project.

4.13.1.3 Alternative 3 (No Action)

The no action alternative would not impact IRP Sites or geological resources. No pesticides would be used as part of this project.

4.14 ENVIRONMENTAL JUSTICE

4.14.1 Alternative 1 (Proposed Action)

EO 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no minority or low-income populations in the area of the proposed action or alternatives, and, thus, there would be no disproportionately high or adverse impact on such populations.

4.14.2 Alternative 2

Alternative 2 would not impact environmental justice.

4.14.3 Alternative 3 (No Action)

The no action alternative would not impact environmental justice.

4.15 INDIRECT AND CUMULATIVE IMPACTS

The short-term increases in air emissions and noise during construction and the impacts predicted for other resource areas, would not be significant when considered cumulatively with other ongoing and planned activities at Grand Forks AFB and nearby off-base areas. The cumulative impact of the Proposed Action or Alternative with other ongoing construction in the area would produce and increase in solid waste generation; however, the increase would be limited to the timeframe of each construction project. The area landfill used for construction and demolition

debris does not have capacity concerns and could readily handle the solid waste generated by the various projects.

4.16 UNAVIODABLE ADVERSE IMPACTS

The use of construction-related vehicles and their short-term impacts on noise, air quality, and traffic is unavoidable.

4.17 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed action and alternative would involve the use of previously developed areas. No croplands, pastureland, wooded areas, or wetlands would be modified or affected as a result of implementing the Proposed Action or Alternative and, consequently, productivity of the area would not be degraded.

4.18 IRREVERSIVLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Under the proposed action, fuels, manpower, economic resources, fill and other construction materials related to construction of the dumpster screen near Sunflower Chapel would be irreversibly lost. The minor loss of vegetation from clearing land for new construction would be an irretrievable commitment of resources.

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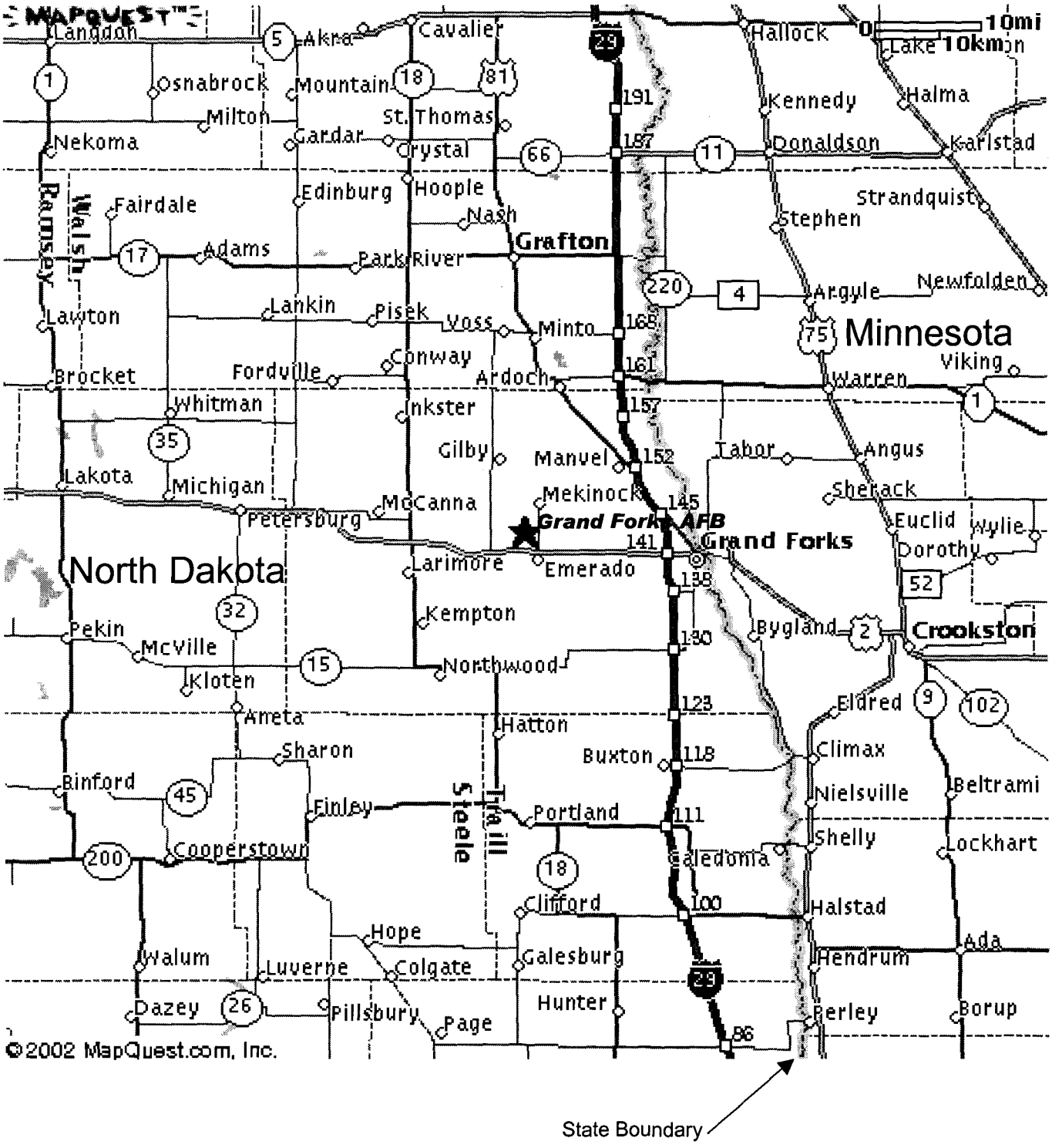
APPENDIX A
LOCATION MAP

Grand Forks AFB, ND



APPENDIX B
CULTURAL RESOURCE PROBABILITY MAP

1 COMPONENT	FY 2003 MILITARY CONSTRUCTION DATA	2 DATE
AF (AMC)		20 Aug 03

3 INSTALLATION AND LOCATION
GRAND FORKS AFB, NORTH DAKOTA

4 PROJECT TITLE	5 PROJECT NUMBER
CONS DUMPSTER SCREEN-SUNFLOWER CHAPEL	JFSD200362

SITE PLAN

FACILITY BOARD APPROVAL _____ DATE _____

DD FORM 1391c

COMPUTER GENERATED FORM

APPENDIX C
ENVIRONMENTAL SITE MAP

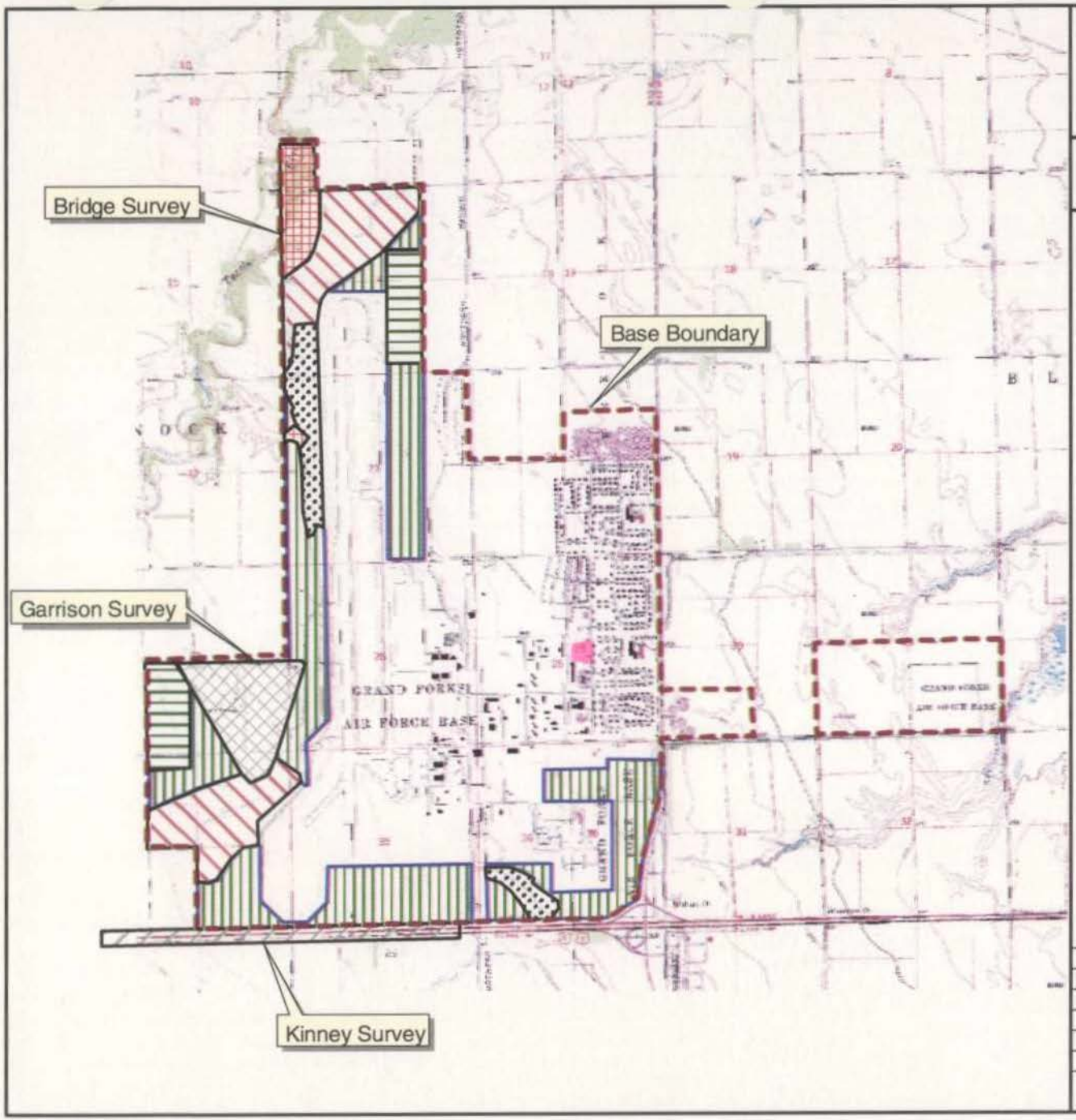


Figure 3.5
Survey Areas and Probabilities

Grand Forks Air Force Base
Cultural Resources Management Plan

Legend

- Historic Bridge Inventory Survey
- Base Boundary
- High Probability
- Medium Probability (near water)
- Kinney Survey
- Medium Probability (beach ridge)
- Peace Keeper Rail Garrison Survey
- Low Probability (distance from water)
- Low Probability (10% sample)
- Previously Disturbed
- Project Location Previously Disturbed

2000 0 2000 4000 Feet

Scale:	1:50000
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N W E S

Grand Forks AFB Environmental Sites (NE)

- Above Ground Storage Tanks (Fuel)
- Abandoned Fuel Lines
- Building 622 - Acid Dip Room
- Helecopter Wash Area
- Oil/Water Separator
- Satellite Accumulation Areas (Haz Waste)
- Scrap Storage Area
- S.H.P.O. (Buildings under consideration)
- Underground Waste Storage
- Underground Storage Tanks (Fuel)
- Ditches/Streams
- IRP Sites
- Landfill Caps
- Trees

Hydrography-flood zone area

- floodplain zone centroid
- Project Location

N

APPENDIX D
AF FORM 813